



NOBLE ENERGY



Location: Doddridge Co., WV
 Field: Doddridge
 Facility: OXF-97 Pad

Slot: Slot A
 Well: OXF-97A-HS
 Wellbore: OXF-97A-HS-PWB

| Facility Name | | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude |
|--|--------------|-------------------|--------------------|----------------|----------------|
| OXF-97 Pad | | 1630862.770 | 2900694.280 | 39°13'58.804"N | 80°48'13.980"W |
| Slot | Local N (ft) | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude |
| Slot A | -0.03 | 1630862.800 | 2900694.250 | 39°13'58.803"N | 80°48'13.980"W |
| Precision 543 (RKB) to Mad line (At Slot Slot A) | | | 18ft | | |
| Mean Sea Level to Mad line (At Slot Slot A) | | | +1333.45ft | | |
| Precision 543 (RKB) to Mean Sea Level | | | 1351.45ft | | |

Grid System: MD27 Lambert West, Virginia SP, Northern Zone (1700, US foot)
 North Reference: Grid north
 Measured depths are referenced to Precision 543 (RKB)
 Precision 543 (RKB) to Mean Sea Level: 1351.45 feet
 Mean Sea Level to Mad line (At Slot Slot A): -0.03 feet
 Coordinates are in feet referenced to SNA
 Created by: calhoun on 10/26/2015

Location Information

| Facility Name | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude |
|--|-------------------|--------------------|--------------------|----------------|
| OXF-97 Pad | 1630862.770 | 2900694.280 | 39°13'58.804"N | 80°48'13.980"W |
| Slot | Local N (ft) | Grid East (US ft) | Grid North (US ft) | Latitude |
| Slot A | -0.03 | 1630862.800 | 2900694.250 | 39°13'58.803"N |
| Precision 543 (RKB) to Mad line (At Slot Slot A) | | | 18ft | |
| Mean Sea Level to Mad line (At Slot Slot A) | | | +1333.45ft | |
| Precision 543 (RKB) to Mean Sea Level | | | 1351.45ft | |



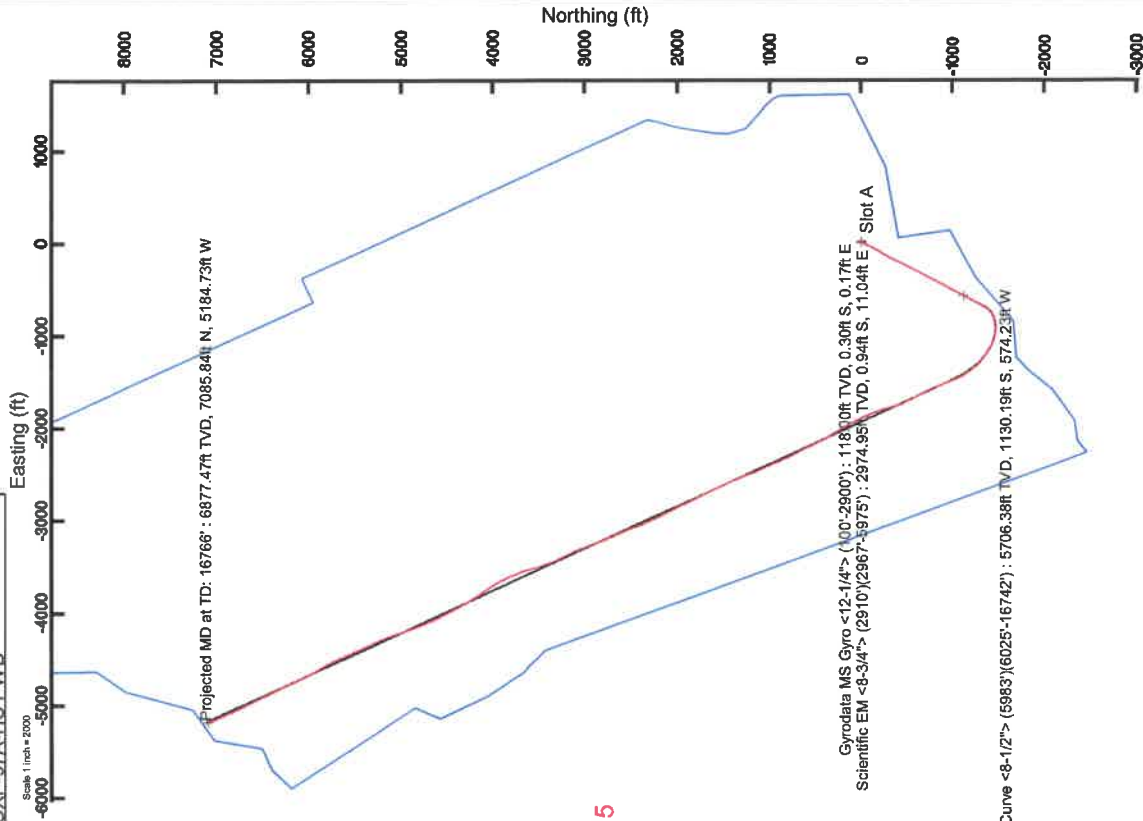
Gyrodata MS Gyro <12-1/4"> : 0.40° Inc, 118.00ft TVD, -0.35ft VS

Scientific EM <8-3/4"> (2910)(2967-5975) : 0.20° Inc, 2975.00ft MD, 2974.95ft TVD, -5.44ft VS

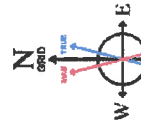
BHI AT Curve <8-1/2"> (5983)(6025-16742) : 28.93° Inc, 6025.00ft MD, 5706.38ft TVD, -790.12ft VS

Projected MD at TD: 16766' : 88.46° Inc, 16786.00ft MD, 6877.47ft TVD, 8598.22ft VS

API: 47-017-06481-0000
 BHI Job #: 7176330
 Rig: Precision 543
 Duration: 4/15/2015-4/20/2015



True Vertical Depth (ft)



Use specified (UDGM) Data 88.70° Field: 52270.mt
 Magnetic North is 7.64 degrees West of True North (at 12/26/2015)
 Grid North is 0.83 degrees West of True North
 To correct azimuth from True to Grid add 0.83 degrees
 To correct azimuth from Magnetic to Grid subtract 6.81 degrees



Vertical Section (ft)

Azimuth 335.49° with reference 0.00 N, 0.00 E



Actual Wellpath Report

OXF-97A-HS AWP Proj: 16766'
Page 1 of 10



REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|-------------------|----------|----------------|
| Operator | NOBLE ENERGY | Slot | Slot A |
| Area | Doddridge Co., WV | Well | OXF-97A-HS |
| Field | Doddridge | Wellbore | OXF-97A-HS AWB |
| Facility | OXF-97 Pad | | |

REPORT SETUP INFORMATION

| | | | |
|---------------------|---|----------------------|---|
| Projection System | NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet | Software System | WellArchitect® 4.0.1 |
| North Reference | Grid | User | Edsaryar |
| Scale | 0.999964 | Report Generated | 06/May/2015 at 11:54 |
| Convergence at slot | 0.83° West | Database/Source file | WellArchitectEasternDB/OXF-97A-HS_AWB.xml |

WELLPATH LOCATION

| | Local coordinates | | Grid coordinates | | Geographic coordinates | |
|-----------------------|-------------------|-----------|------------------|------------------|------------------------|----------------|
| | North [ft] | East [ft] | Easting [US ft] | Northing [US ft] | Latitude | Longitude |
| Slot Location | -0.03 | 0.03 | 1630662.80 | 269664.25 | 39°13'58.903"N | 80°48'13.980"W |
| Facility Reference Pt | | | 1630662.77 | 269664.28 | 39°13'58.904"N | 80°48'13.980"W |
| Field Reference Pt | | | 609601.22 | 0.00 | 38°23'48.753"N | 84°21'09.765"W |

WELLPATH DATUM

| | | | |
|--------------------------|---------------------|--|-------------------|
| Calculation method | Minimum curvature | Precision 543 (RKB) to Facility Vertical Datum | 1351.45ft |
| Horizontal Reference Pt | Slot | Precision 543 (RKB) to Mean Sea Level | 1351.45ft |
| Vertical Reference Pt | Precision 543 (RKB) | Precision 543 (RKB) to Mud Line at Slot (Slot A) | 18.00ft |
| MD Reference Pt | Precision 543 (RKB) | Section Origin | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level | Section Azimuth | 335.49° |



Actual Wellpath Report

OXF-97A-HS AWP Proj: 16766'
Page 2 of 10



REFERENCE WELLPATH IDENTIFICATION

| | Slot | Slot A |
|----------|-------------------|----------------|
| Operator | NOBLE ENERGY | |
| Area | Doddridge Co., WV | OXF-97A-HS |
| Field | Doddridge | OXF-97A-HS AWB |
| Facility | OXF-97 Pad | |

WELLPATH DATA (208 stations) † = interpolated/extrapolated station

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 0.00† | 0.000 | 150.880 | 0.00 | 0.00 | 0.00 | 0.00 | 1630662.80 | 269664.25 | 39°13'58.903"N | 80°48'13.980"W | 0.00 | 0.000 | 0.00 | 0.00 | 0.00 |
| 18.00 | 0.000 | 150.880 | 18.00 | 0.00 | 0.00 | 0.00 | 1630662.80 | 269664.25 | 39°13'58.903"N | 80°48'13.980"W | 0.00 | 0.000 | 0.00 | 0.00 | 0.00 |
| 118.00 | 0.400 | 150.880 | 118.00 | -0.35 | -0.30 | 0.17 | 1630662.97 | 269663.95 | 39°13'58.900"N | 80°48'13.978"W | 0.35 | 150.880 | 0.40 | 0.40 | 0.00 |
| 218.00 | 0.200 | 173.230 | 218.00 | -0.86 | -0.78 | 0.36 | 1630663.16 | 269663.47 | 39°13'58.896"N | 80°48'13.975"W | 0.86 | 155.295 | 0.23 | -0.20 | 22.35 |
| 318.00 | 0.280 | 153.740 | 318.00 | -1.27 | -1.18 | 0.49 | 1630663.29 | 269663.07 | 39°13'58.892"N | 80°48'13.974"W | 1.27 | 157.416 | 0.11 | 0.08 | -19.49 |
| 418.00 | 0.380 | 105.680 | 418.00 | -1.73 | -1.48 | 0.92 | 1630663.72 | 269662.77 | 39°13'58.889"N | 80°48'13.968"W | 1.74 | 148.311 | 0.28 | 0.10 | -48.06 |
| 518.00 | 0.350 | 95.200 | 517.99 | -2.10 | -1.60 | 1.54 | 1630664.34 | 269662.65 | 39°13'58.888"N | 80°48'13.960"W | 2.22 | 136.128 | 0.07 | -0.03 | -10.48 |
| 618.00 | 0.380 | 106.930 | 617.99 | -2.47 | -1.73 | 2.16 | 1630664.96 | 269662.52 | 39°13'58.887"N | 80°48'13.952"W | 2.77 | 128.611 | 0.08 | 0.03 | 11.73 |
| 718.00 | 0.270 | 117.700 | 717.99 | -2.87 | -1.93 | 2.69 | 1630665.49 | 269662.32 | 39°13'58.885"N | 80°48'13.945"W | 3.31 | 125.716 | 0.13 | -0.11 | 10.77 |
| 818.00 | 0.370 | 130.520 | 817.99 | -3.35 | -2.25 | 3.14 | 1630665.94 | 269662.00 | 39°13'58.882"N | 80°48'13.940"W | 3.86 | 125.630 | 0.12 | 0.10 | 12.82 |
| 918.00 | 0.180 | 106.360 | 917.99 | -3.75 | -2.51 | 3.54 | 1630666.34 | 269661.74 | 39°13'58.879"N | 80°48'13.935"W | 4.33 | 125.309 | 0.22 | -0.19 | -24.16 |
| 1018.00 | 0.090 | 144.140 | 1017.99 | -3.93 | -2.61 | 3.73 | 1630666.53 | 269661.64 | 39°13'58.878"N | 80°48'13.932"W | 4.56 | 124.986 | 0.12 | -0.09 | 37.78 |
| 1118.00 | 0.090 | 129.860 | 1117.99 | -4.07 | -2.73 | 3.84 | 1630666.64 | 269661.52 | 39°13'58.877"N | 80°48'13.931"W | 4.71 | 125.381 | 0.02 | 0.00 | -14.28 |
| 1218.00 | 0.330 | 95.260 | 1217.99 | -4.29 | -2.80 | 4.19 | 1630666.99 | 269661.45 | 39°13'58.876"N | 80°48'13.926"W | 5.04 | 123.807 | 0.26 | 0.24 | -34.60 |
| 1318.00 | 0.320 | 42.250 | 1317.98 | -4.32 | -2.62 | 4.66 | 1630667.46 | 269661.63 | 39°13'58.878"N | 80°48'13.920"W | 5.35 | 119.370 | 0.29 | -0.01 | -53.01 |
| 1418.00 | 0.660 | 25.890 | 1417.98 | -3.84 | -1.90 | 5.10 | 1630667.90 | 269662.35 | 39°13'58.885"N | 80°48'13.915"W | 5.44 | 110.417 | 0.36 | 0.34 | -16.36 |
| 1518.00 | 0.810 | 5.520 | 1517.97 | -2.86 | -0.68 | 5.42 | 1630668.22 | 269663.57 | 39°13'58.898"N | 80°48'13.911"W | 5.46 | 97.120 | 0.30 | 0.15 | -20.37 |
| 1618.00 | 0.440 | 36.330 | 1617.97 | -2.07 | 0.34 | 5.72 | 1630668.52 | 269664.59 | 39°13'58.908"N | 80°48'13.907"W | 5.73 | 86.638 | 0.49 | -0.37 | 30.81 |
| 1718.00 | 0.450 | 78.020 | 1717.96 | -1.96 | 0.73 | 6.33 | 1630669.13 | 269664.98 | 39°13'58.912"N | 80°48'13.900"W | 6.37 | 83.450 | 0.32 | 0.01 | 41.69 |
| 1818.00 | 0.560 | 101.940 | 1817.96 | -2.34 | 0.71 | 7.19 | 1630669.99 | 269664.96 | 39°13'58.911"N | 80°48'13.889"W | 7.22 | 84.384 | 0.24 | 0.11 | 23.92 |
| 1918.00 | 0.380 | 71.430 | 1917.96 | -2.66 | 0.71 | 7.98 | 1630670.78 | 269664.96 | 39°13'58.912"N | 80°48'13.879"W | 8.01 | 84.906 | 0.30 | -0.18 | -30.51 |
| 2018.00 | 0.270 | 65.870 | 2017.96 | -2.70 | 0.91 | 8.51 | 1630671.31 | 269665.16 | 39°13'58.914"N | 80°48'13.872"W | 8.56 | 83.875 | 0.11 | -0.11 | -5.56 |
| 2118.00 | 0.260 | 83.140 | 2117.95 | -2.77 | 1.04 | 8.95 | 1630671.75 | 269665.29 | 39°13'58.915"N | 80°48'13.866"W | 9.01 | 83.393 | 0.08 | -0.01 | 17.27 |
| 2218.00 | 0.120 | 108.800 | 2217.95 | -2.91 | 1.03 | 9.28 | 1630672.08 | 269665.28 | 39°13'58.915"N | 80°48'13.862"W | 9.33 | 83.663 | 0.16 | -0.14 | 25.66 |
| 2318.00 | 0.350 | 133.430 | 2317.95 | -3.27 | 0.79 | 9.60 | 1630672.40 | 269665.04 | 39°13'58.913"N | 80°48'13.858"W | 9.63 | 85.315 | 0.25 | 0.23 | 24.63 |
| 2418.00 | 0.220 | 150.590 | 2417.95 | -3.74 | 0.41 | 9.91 | 1630672.71 | 269664.66 | 39°13'58.909"N | 80°48'13.854"W | 9.92 | 87.636 | 0.15 | -0.13 | 17.16 |
| 2518.00 | 0.140 | 120.940 | 2517.95 | -4.03 | 0.18 | 10.11 | 1630672.91 | 269664.43 | 39°13'58.907"N | 80°48'13.852"W | 10.11 | 88.985 | 0.12 | -0.08 | -29.65 |
| 2618.00 | 0.210 | 114.240 | 2617.95 | -4.27 | 0.04 | 10.38 | 1630673.18 | 269664.29 | 39°13'58.905"N | 80°48'13.848"W | 10.38 | 89.773 | 0.07 | 0.07 | -6.70 |
| 2718.00 | 0.230 | 154.520 | 2717.95 | -4.61 | -0.22 | 10.64 | 1630673.44 | 269664.03 | 39°13'58.903"N | 80°48'13.845"W | 10.64 | 91.159 | 0.15 | 0.02 | 40.28 |
| 2818.00 | 0.140 | 153.090 | 2817.95 | -4.93 | -0.51 | 10.78 | 1630673.58 | 269663.74 | 39°13'58.900"N | 80°48'13.843"W | 10.79 | 92.684 | 0.09 | -0.09 | -1.43 |



Actual Wellpath Report

OXF-97A-HS AWP Proj: 16766'
Page 3 of 10



REFERENCE WELLPATH IDENTIFICATION

| Operator | NOBLE ENERGY | Slot | Slot A |
|----------|-------------------|----------|----------------|
| Area | Doddridge Co., WV | Well | OXF-97A-HS |
| Field | Doddridge | Wellbore | OXF-97A-HS AWB |
| Facility | OXF-97 Pad | | |

WELLPATH DATA (208 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 2918.00 | 0.210 | 147.300 | 2917.95 | -5.24 | -0.77 | 10.93 | 1630673.73 | 269663.48 | 39°13'58.897"N | 80°48'13.841"W | 10.96 | 94.021 | 0.07 | 0.07 | -5.79 |
| 2975.00 | 0.200 | 147.570 | 2974.95 | -5.44 | -0.94 | 11.04 | 1630673.84 | 269663.31 | 39°13'58.896"N | 80°48'13.839"W | 11.08 | 94.867 | 0.02 | -0.02 | 0.47 |
| 3102.00 | 0.480 | 229.310 | 3101.95 | -5.80 | -1.47 | 10.76 | 1630673.56 | 269662.78 | 39°13'58.890"N | 80°48'13.843"W | 10.86 | 97.803 | 0.39 | 0.22 | 64.36 |
| 3132.00 | 2.530 | 210.400 | 3131.93 | -6.22 | -2.13 | 10.33 | 1630673.13 | 269662.12 | 39°13'58.884"N | 80°48'13.848"W | 10.55 | 101.639 | 6.94 | 6.83 | -53.03 |
| 3162.00 | 4.110 | 204.770 | 3161.88 | -7.30 | -3.67 | 9.54 | 1630672.34 | 269660.58 | 39°13'58.868"N | 80°48'13.858"W | 10.23 | 111.060 | 5.37 | 5.27 | -18.77 |
| 3192.00 | 5.360 | 206.130 | 3191.78 | -8.89 | -5.91 | 8.48 | 1630671.28 | 269658.34 | 39°13'58.846"N | 80°48'13.871"W | 10.33 | 124.883 | 4.18 | 4.17 | 4.53 |
| 3222.00 | 7.060 | 207.330 | 3221.60 | -10.92 | -8.81 | 7.01 | 1630669.81 | 269655.45 | 39°13'58.817"N | 80°48'13.889"W | 11.26 | 141.468 | 5.68 | 5.67 | 4.00 |
| 3253.00 | 8.480 | 208.410 | 3252.32 | -13.48 | -12.51 | 5.05 | 1630667.85 | 269651.74 | 39°13'58.781"N | 80°48'13.914"W | 13.49 | 158.015 | 4.60 | 4.58 | 3.48 |
| 3283.00 | 9.270 | 209.810 | 3281.96 | -16.22 | -16.55 | 2.80 | 1630665.60 | 269647.70 | 39°13'58.740"N | 80°48'13.941"W | 16.78 | 170.411 | 2.73 | 2.63 | 4.67 |
| 3313.00 | 11.030 | 212.520 | 3311.49 | -19.19 | -21.07 | 0.05 | 1630662.85 | 269643.18 | 39°13'58.695"N | 80°48'13.975"W | 21.07 | 179.859 | 6.08 | 5.87 | 9.03 |
| 3343.00 | 11.960 | 211.240 | 3340.89 | -22.50 | -26.14 | -3.10 | 1630659.70 | 269638.11 | 39°13'58.645"N | 80°48'14.015"W | 26.33 | 186.769 | 3.21 | 3.10 | -4.27 |
| 3374.00 | 12.540 | 210.330 | 3371.18 | -26.25 | -31.80 | -6.47 | 1630656.33 | 269632.46 | 39°13'58.588"N | 80°48'14.056"W | 32.45 | 191.499 | 1.97 | 1.87 | -2.94 |
| 3404.00 | 13.780 | 209.350 | 3400.39 | -30.23 | -37.72 | -9.86 | 1630652.94 | 269626.53 | 39°13'58.529"N | 80°48'14.098"W | 38.99 | 194.655 | 4.20 | 4.13 | -3.27 |
| 3434.00 | 14.350 | 208.720 | 3429.49 | -34.56 | -44.10 | -13.40 | 1630649.40 | 269620.16 | 39°13'58.466"N | 80°48'14.142"W | 46.09 | 196.906 | 1.97 | 1.90 | -2.10 |
| 3464.00 | 14.640 | 207.830 | 3458.54 | -39.10 | -50.71 | -16.96 | 1630645.84 | 269613.54 | 39°13'58.400"N | 80°48'14.186"W | 53.47 | 198.491 | 1.22 | 0.97 | -2.97 |
| 3494.00 | 16.210 | 207.940 | 3487.46 | -43.97 | -57.76 | -20.69 | 1630642.11 | 269606.49 | 39°13'58.330"N | 80°48'14.232"W | 61.36 | 199.708 | 5.23 | 5.23 | 0.37 |
| 3524.00 | 16.860 | 205.760 | 3516.22 | -49.31 | -65.38 | -24.54 | 1630638.26 | 269598.87 | 39°13'58.254"N | 80°48'14.280"W | 69.83 | 200.576 | 2.99 | 2.17 | -7.27 |
| 3555.00 | 17.390 | 206.050 | 3545.84 | -55.12 | -73.59 | -28.53 | 1630634.27 | 269590.66 | 39°13'58.172"N | 80°48'14.329"W | 78.93 | 201.192 | 1.73 | 1.71 | 0.94 |
| 3585.00 | 18.720 | 205.300 | 3574.36 | -61.08 | -81.97 | -32.56 | 1630630.24 | 269582.28 | 39°13'58.089"N | 80°48'14.379"W | 88.20 | 201.663 | 4.50 | 4.43 | -2.50 |
| 3615.00 | 19.260 | 205.640 | 3602.73 | -67.35 | -90.78 | -36.76 | 1630626.04 | 269573.47 | 39°13'58.001"N | 80°48'14.430"W | 97.94 | 202.042 | 1.84 | 1.80 | 1.13 |
| 3645.00 | 19.080 | 204.070 | 3631.07 | -73.77 | -99.72 | -40.90 | 1630621.90 | 269564.53 | 39°13'57.912"N | 80°48'14.481"W | 107.78 | 202.299 | 1.82 | -0.60 | -5.23 |
| 3675.00 | 19.330 | 203.890 | 3659.40 | -80.31 | -108.74 | -44.91 | 1630617.89 | 269555.52 | 39°13'57.822"N | 80°48'14.531"W | 117.65 | 202.440 | 0.86 | 0.83 | -0.60 |
| 3706.00 | 21.000 | 204.590 | 3688.50 | -87.35 | -118.48 | -49.30 | 1630613.50 | 269545.77 | 39°13'57.725"N | 80°48'14.585"W | 128.33 | 202.591 | 5.44 | 5.39 | 2.26 |
| 3736.00 | 21.720 | 205.530 | 3716.44 | -94.44 | -128.38 | -53.93 | 1630608.88 | 269535.88 | 39°13'57.627"N | 80°48'14.642"W | 139.24 | 202.785 | 2.66 | 2.40 | 3.13 |
| 3766.00 | 21.960 | 206.530 | 3744.28 | -101.53 | -138.41 | -58.82 | 1630603.98 | 269525.85 | 39°13'57.527"N | 80°48'14.702"W | 150.39 | 203.026 | 1.48 | 2.80 | 3.33 |
| 3796.00 | 23.540 | 206.320 | 3771.95 | -108.84 | -148.79 | -63.99 | 1630598.82 | 269515.46 | 39°13'57.424"N | 80°48'14.766"W | 161.97 | 203.269 | 5.27 | 5.27 | -0.70 |
| 3827.00 | 25.310 | 207.490 | 3800.17 | -116.83 | -160.22 | -69.79 | 1630593.01 | 269504.03 | 39°13'57.310"N | 80°48'14.837"W | 174.76 | 203.537 | 5.92 | 5.71 | 3.77 |
| 3857.00 | 25.770 | 207.860 | 3827.24 | -124.76 | -171.68 | -75.80 | 1630587.00 | 269492.58 | 39°13'57.196"N | 80°48'14.911"W | 187.67 | 203.822 | 1.62 | 1.53 | 1.23 |
| 3887.00 | 27.460 | 209.840 | 3854.06 | -132.78 | -183.44 | -82.29 | 1630580.51 | 269480.81 | 39°13'57.079"N | 80°48'14.992"W | 201.05 | 204.160 | 6.36 | 5.63 | 6.60 |
| 3917.00 | 28.860 | 211.660 | 3880.51 | -140.84 | -195.61 | -89.53 | 1630573.27 | 269468.65 | 39°13'56.957"N | 80°48'15.082"W | 215.12 | 204.594 | 5.47 | 4.67 | 6.07 |



Actual Wellpath Report

OXF-97A-HS AWP Proj: 16766'
Page 4 of 10



REFERENCE WELLPATH IDENTIFICATION

| Operator | NOBLE ENERGY | Slot | Slot A |
|----------|-------------------|----------|----------------|
| Area | Doddridge Co., WV | Well | OXF-97A-HS |
| Field | Doddridge | Wellbore | OXF-97A-HS AWB |
| Facility | OXF-97 Pad | | |

WELLPATH DATA (208 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 3947.00 | 29.290 | 211.790 | 3906.73 | -148.94 | -208.01 | -97.20 | 1630565.61 | 269456.25 | 39°13'56.834"N | 80°48'15.177"W | 229.60 | 205.046 | 1.45 | 1.43 | 0.43 |
| 3978.00 | 30.100 | 211.280 | 3933.66 | -157.52 | -221.10 | -105.23 | 1630557.58 | 269443.16 | 39°13'56.703"N | 80°48'15.276"W | 244.86 | 205.452 | 2.74 | 2.61 | -1.65 |
| 4008.00 | 30.110 | 212.060 | 3959.61 | -165.89 | -233.90 | -113.13 | 1630549.68 | 269430.36 | 39°13'56.576"N | 80°48'15.374"W | 259.82 | 205.811 | 1.30 | 0.03 | 2.60 |
| 4038.00 | 29.900 | 211.350 | 3985.59 | -174.24 | -246.67 | -121.01 | 1630541.79 | 269417.59 | 39°13'56.448"N | 80°48'15.472"W | 274.75 | 206.132 | 1.38 | -0.70 | -2.37 |
| 4129.00 | 30.430 | 208.910 | 4064.27 | -200.70 | -286.21 | -143.95 | 1630518.85 | 269378.05 | 39°13'56.054"N | 80°48'15.756"W | 320.37 | 206.701 | 1.47 | 0.58 | -2.68 |
| 4220.00 | 29.660 | 207.510 | 4143.04 | -228.29 | -326.36 | -165.50 | 1630497.31 | 269337.91 | 39°13'55.654"N | 80°48'16.023"W | 365.92 | 206.890 | 1.14 | -0.85 | -1.54 |
| 4314.00 | 30.900 | 207.050 | 4224.22 | -257.61 | -368.48 | -187.22 | 1630475.59 | 269295.78 | 39°13'55.235"N | 80°48'16.291"W | 413.31 | 206.934 | 1.34 | 1.32 | -0.49 |
| 4404.00 | 30.270 | 205.640 | 4301.70 | -286.51 | -409.51 | -207.54 | 1630455.27 | 269254.75 | 39°13'54.827"N | 80°48'16.542"W | 459.10 | 206.876 | 1.06 | -0.70 | -1.57 |
| 4495.00 | 30.180 | 206.540 | 4380.33 | -315.59 | -450.65 | -227.69 | 1630435.12 | 269213.61 | 39°13'54.417"N | 80°48'16.790"W | 504.91 | 206.805 | 0.51 | -0.10 | 0.99 |
| 4586.00 | 30.630 | 206.240 | 4458.81 | -344.64 | -491.91 | -248.16 | 1630414.65 | 269172.36 | 39°13'54.006"N | 80°48'17.043"W | 550.96 | 206.770 | 0.52 | 0.49 | -0.33 |
| 4677.00 | 30.030 | 204.750 | 4537.36 | -374.16 | -533.38 | -267.94 | 1630394.87 | 269130.89 | 39°13'53.594"N | 80°48'17.286"W | 596.90 | 206.672 | 1.06 | -0.66 | -1.64 |
| 4768.00 | 30.330 | 205.760 | 4616.02 | -403.71 | -574.76 | -287.46 | 1630375.35 | 269089.52 | 39°13'53.182"N | 80°48'17.527"W | 642.63 | 206.572 | 0.65 | 0.33 | 1.11 |
| 4858.00 | 29.700 | 208.090 | 4693.96 | -431.78 | -614.89 | -307.83 | 1630354.98 | 269049.38 | 39°13'52.782"N | 80°48'17.778"W | 687.64 | 206.594 | 1.47 | -0.70 | 2.59 |
| 4949.00 | 28.210 | 207.590 | 4773.58 | -458.68 | -653.85 | -328.41 | 1630334.40 | 269010.43 | 39°13'52.394"N | 80°48'18.032"W | 731.69 | 206.669 | 1.66 | -1.64 | -0.55 |
| 5043.00 | 28.310 | 206.280 | 4856.38 | -486.42 | -693.52 | -348.57 | 1630314.24 | 268970.75 | 39°13'51.999"N | 80°48'18.281"W | 776.19 | 206.684 | 0.67 | 0.11 | -1.39 |
| 5133.00 | 29.140 | 206.980 | 4935.30 | -513.56 | -732.19 | -367.96 | 1630294.85 | 268932.09 | 39°13'51.615"N | 80°48'18.520"W | 819.45 | 206.682 | 1.00 | 0.92 | 0.78 |
| 5225.00 | 30.290 | 206.320 | 5015.20 | -542.16 | -772.94 | -388.41 | 1630274.40 | 268891.33 | 39°13'51.209"N | 80°48'18.773"W | 865.05 | 206.680 | 1.30 | 1.25 | -0.72 |
| 5316.00 | 31.530 | 207.330 | 5093.27 | -571.36 | -814.65 | -409.51 | 1630253.30 | 268849.63 | 39°13'50.794"N | 80°48'19.033"W | 911.79 | 206.688 | 1.48 | 1.36 | 1.11 |
| 5407.00 | 30.520 | 207.200 | 5171.26 | -600.38 | -856.35 | -431.00 | 1630231.82 | 268807.94 | 39°13'50.379"N | 80°48'19.299"W | 958.69 | 206.716 | 1.11 | -1.11 | -0.14 |
| 5499.00 | 30.560 | 207.970 | 5250.49 | -629.10 | -897.78 | -452.65 | 1630210.17 | 268766.50 | 39°13'49.966"N | 80°48'19.566"W | 1005.43 | 206.756 | 0.43 | 0.04 | 0.84 |
| 5590.00 | 29.870 | 209.190 | 5329.13 | -656.60 | -937.99 | -474.55 | 1630188.27 | 268726.29 | 39°13'49.565"N | 80°48'19.837"W | 1051.20 | 206.836 | 1.01 | -0.76 | 1.34 |
| 5680.00 | 29.260 | 207.960 | 5407.41 | -683.27 | -976.99 | -495.79 | 1630167.03 | 268687.30 | 39°13'49.177"N | 80°48'20.100"W | 1095.59 | 206.906 | 0.96 | -0.68 | -1.37 |
| 5772.00 | 30.100 | 205.340 | 5487.35 | -711.84 | -1017.70 | -516.21 | 1630146.61 | 268646.59 | 39°13'48.772"N | 80°48'20.351"W | 1141.13 | 206.895 | 1.68 | 0.91 | -2.85 |
| 5862.00 | 30.470 | 206.190 | 5565.65 | -740.85 | -1058.57 | -535.94 | 1630126.88 | 268605.72 | 39°13'48.365"N | 80°48'20.595"W | 1186.51 | 206.852 | 0.63 | 0.41 | 0.94 |
| 5953.00 | 29.920 | 208.230 | 5643.72 | -769.20 | -1099.27 | -556.86 | 1630105.97 | 268565.02 | 39°13'47.960"N | 80°48'20.853"W | 1232.27 | 206.865 | 1.28 | -0.60 | 2.24 |
| 5983.00 | 29.680 | 209.460 | 5669.75 | -778.10 | -1112.33 | -564.05 | 1630098.77 | 268551.96 | 39°13'47.830"N | 80°48'20.942"W | 1247.17 | 206.889 | 2.19 | -0.80 | 4.10 |
| 6025.00 | 28.930 | 209.960 | 5706.38 | -790.12 | -1130.19 | -574.23 | 1630088.59 | 268534.10 | 39°13'47.652"N | 80°48'21.068"W | 1267.70 | 206.935 | 1.88 | -1.79 | 1.19 |
| 6115.00 | 29.200 | 208.690 | 5785.04 | -815.92 | -1168.31 | -595.65 | 1630067.18 | 268495.99 | 39°13'47.272"N | 80°48'21.333"W | 1311.39 | 207.014 | 0.75 | 0.30 | -1.41 |
| 6204.00 | 30.990 | 208.580 | 5862.04 | -842.69 | -1207.47 | -617.03 | 1630045.79 | 268456.82 | 39°13'46.882"N | 80°48'21.597"W | 1355.99 | 207.067 | 2.01 | 2.01 | -0.12 |
| 6293.00 | 31.600 | 208.130 | 5938.09 | -870.60 | -1248.16 | -638.99 | 1630023.84 | 268416.14 | 39°13'46.476"N | 80°48'21.869"W | 1402.21 | 207.110 | 0.73 | 0.69 | -0.51 |



Actual Wellpath Report

OXF-97A-HS AWP Proj: 16766'
Page 5 of 10



REFERENCE WELLPATH IDENTIFICATION

| Operator | NOBLE ENERGY | Slot | Slot A |
|----------|-------------------|----------|----------------|
| Area | Doddridge Co., WV | Well | OXF-97A-HS |
| Field | Doddridge | Wellbore | OXF-97A-HS AWB |
| Facility | OXF-97 Pad | | |

WELLPATH DATA (208 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert.Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 6383.00 | 31.660 | 208.320 | 6014.72 | -899.18 | -1289.75 | -661.31 | 1630001.52 | 268374.55 | 39°13'46.062"N | 80°48'22.145"W | 1449.40 | 207.146 | 0.13 | 0.07 | 0.21 |
| 6473.00 | 31.920 | 207.580 | 6091.22 | -928.07 | -1331.63 | -683.53 | 1629979.30 | 268332.67 | 39°13'45.645"N | 80°48'22.419"W | 1496.81 | 207.172 | 0.52 | 0.29 | -0.82 |
| 6562.00 | 32.020 | 210.230 | 6166.73 | -956.15 | -1372.87 | -706.30 | 1629956.52 | 268291.43 | 39°13'45.234"N | 80°48'22.701"W | 1543.90 | 207.225 | 1.58 | 0.11 | 2.98 |
| 6652.00 | 32.950 | 226.990 | 6242.80 | -977.73 | -1410.26 | -736.27 | 1629926.55 | 268254.04 | 39°13'44.860"N | 80°48'23.075"W | 1590.89 | 207.568 | 10.03 | 1.03 | 18.62 |
| 6741.00 | 33.090 | 241.850 | 6317.55 | -986.97 | -1438.28 | -775.46 | 1629887.37 | 268226.03 | 39°13'44.578"N | 80°48'23.568"W | 1634.01 | 208.332 | 9.08 | 0.16 | 16.70 |
| 6831.00 | 36.420 | 249.020 | 6391.51 | -986.89 | -1459.45 | -822.10 | 1629840.73 | 268204.86 | 39°13'44.362"N | 80°48'24.157"W | 1675.06 | 209.392 | 5.85 | 3.70 | 7.97 |
| 6920.00 | 41.800 | 261.690 | 6460.66 | -976.96 | -1473.23 | -876.24 | 1629786.59 | 268191.08 | 39°13'44.218"N | 80°48'24.842"W | 1714.12 | 210.743 | 10.80 | 6.04 | 14.24 |
| 7009.00 | 46.360 | 274.060 | 6524.70 | -953.23 | -1475.24 | -937.86 | 1629724.97 | 268189.07 | 39°13'44.189"N | 80°48'25.625"W | 1748.12 | 212.446 | 10.92 | 5.12 | 13.90 |
| 7099.00 | 50.820 | 282.530 | 6584.27 | -916.59 | -1465.35 | -1004.50 | 1629658.34 | 268198.96 | 39°13'44.277"N | 80°48'26.473"W | 1776.59 | 214.431 | 8.62 | 4.96 | 9.41 |
| 7188.00 | 55.700 | 290.450 | 6637.55 | -869.75 | -1444.99 | -1072.73 | 1629590.11 | 268219.32 | 39°13'44.469"N | 80°48'27.344"W | 1799.65 | 216.589 | 8.99 | 5.48 | 8.90 |
| 7278.00 | 61.220 | 297.580 | 6684.65 | -812.27 | -1413.69 | -1142.64 | 1629520.20 | 268250.62 | 39°13'44.768"N | 80°48'28.238"W | 1817.73 | 218.948 | 9.12 | 6.13 | 7.92 |
| 7368.00 | 66.090 | 304.770 | 6724.62 | -745.68 | -1371.90 | -1211.51 | 1629451.34 | 268292.41 | 39°13'45.171"N | 80°48'29.121"W | 1830.26 | 221.447 | 8.97 | 5.41 | 7.99 |
| 7457.00 | 68.120 | 311.810 | 6759.28 | -672.80 | -1321.11 | -1275.78 | 1629387.07 | 268343.19 | 39°13'45.664"N | 80°48'29.947"W | 1836.56 | 224.000 | 7.63 | 5.28 | 7.91 |
| 7547.00 | 72.850 | 317.840 | 6789.36 | -593.47 | -1261.31 | -1335.85 | 1629327.00 | 268402.99 | 39°13'46.246"N | 80°48'30.721"W | 1837.23 | 226.644 | 8.21 | 5.26 | 6.70 |
| 7637.00 | 78.380 | 324.020 | 6811.73 | -509.16 | -1193.65 | -1390.70 | 1629272.15 | 268470.64 | 39°13'46.907"N | 80°48'31.431"W | 1832.72 | 229.360 | 9.05 | 6.14 | 6.87 |
| 7726.00 | 84.790 | 331.290 | 6824.77 | -422.04 | -1119.34 | -1437.71 | 1629225.15 | 268544.95 | 39°13'47.635"N | 80°48'32.042"W | 1822.06 | 232.097 | 10.82 | 7.20 | 8.17 |
| 7816.00 | 88.000 | 337.600 | 6830.43 | -332.29 | -1038.35 | -1476.42 | 1629186.44 | 268625.94 | 39°13'48.429"N | 80°48'32.548"W | 1804.99 | 234.882 | 7.85 | 3.57 | 7.01 |
| 7905.00 | 88.060 | 337.880 | 6833.49 | -243.41 | -956.03 | -1510.11 | 1629152.74 | 268708.25 | 39°13'49.238"N | 80°48'32.992"W | 1787.30 | 237.663 | 0.32 | 0.07 | 0.31 |
| 7995.00 | 88.000 | 338.060 | 6836.59 | -153.55 | -872.65 | -1543.85 | 1629119.01 | 268791.63 | 39°13'50.057"N | 80°48'33.436"W | 1773.42 | 240.523 | 0.21 | -0.07 | 0.20 |
| 8084.00 | 89.880 | 338.290 | 6838.23 | -64.66 | -790.05 | -1576.93 | 1629085.93 | 268874.23 | 39°13'50.869"N | 80°48'33.872"W | 1763.77 | 243.389 | 2.13 | 2.11 | 0.26 |
| 8174.00 | 89.970 | 332.980 | 6838.35 | 25.30 | -708.10 | -1614.05 | 1629048.81 | 268956.18 | 39°13'51.673"N | 80°48'34.358"W | 1762.54 | 246.313 | 5.90 | 0.10 | -5.90 |
| 8263.00 | 89.910 | 332.310 | 6838.44 | 114.19 | -629.05 | -1654.95 | 1629007.92 | 269003.22 | 39°13'52.449"N | 80°48'34.893"W | 1770.47 | 249.188 | 0.76 | -0.07 | -0.75 |
| 8353.00 | 90.060 | 332.850 | 6838.47 | 204.08 | -549.16 | -1696.39 | 1628966.47 | 269115.11 | 39°13'53.232"N | 80°48'35.434"W | 1783.06 | 252.062 | 0.62 | 0.17 | 0.60 |
| 8442.00 | 90.430 | 334.040 | 6838.09 | 293.02 | -469.55 | -1736.18 | 1628926.69 | 269194.72 | 39°13'54.013"N | 80°48'35.954"W | 1798.55 | 254.866 | 1.40 | 0.42 | 1.34 |
| 8532.00 | 90.490 | 344.130 | 6837.36 | 382.72 | -385.59 | -1768.26 | 1628894.60 | 269278.67 | 39°13'54.838"N | 80°48'36.378"W | 1809.82 | 257.698 | 11.21 | 0.07 | 11.21 |
| 8621.00 | 90.860 | 345.310 | 6836.31 | 470.56 | -299.75 | -1791.72 | 1628871.15 | 269364.51 | 39°13'55.683"N | 80°48'36.692"W | 1816.62 | 260.503 | 1.39 | 0.42 | 1.33 |
| 8711.00 | 90.860 | 340.990 | 6834.96 | 559.73 | -213.64 | -1817.80 | 1628845.07 | 269450.62 | 39°13'56.531"N | 80°48'37.039"W | 1830.31 | 263.297 | 4.80 | 0.00 | -4.80 |
| 8800.00 | 91.080 | 339.160 | 6833.46 | 648.42 | -129.98 | -1848.12 | 1628814.75 | 269534.27 | 39°13'57.353"N | 80°48'37.440"W | 1852.69 | 265.977 | 2.07 | 0.25 | -2.06 |
| 8889.00 | 90.650 | 337.550 | 6832.11 | 737.30 | -47.27 | -1880.94 | 1628781.93 | 269616.98 | 39°13'58.166"N | 80°48'37.872"W | 1881.54 | 268.560 | 1.87 | -0.48 | -1.81 |
| 8979.00 | 90.580 | 333.210 | 6831.15 | 827.27 | 34.52 | -1918.43 | 1628744.45 | 269698.77 | 39°13'58.969"N | 80°48'38.364"W | 1918.74 | 271.031 | 4.82 | -0.08 | -4.82 |



Actual Wellpath Report

OXF-97A-HS AWP Proj: 16766'
Page 6 of 10



REFERENCE WELLPATH IDENTIFICATION

| | Slot | Slot A |
|----------|-------------------|----------------|
| Operator | NOBLE ENERGY | |
| Area | Doddridge Co., WV | OXF-97A-HS |
| Field | Doddridge | OXF-97A-HS AWB |
| Facility | OXF-97 Pad | |

WELLPATH DATA (208 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 9068.00 | 90.710 | 330.850 | 6830.14 | 916.10 | 113.12 | -1960.16 | 1628702.71 | 2697777.36 | 39°13'59.739"N | 80°48'38.909"W | 1963.42 | 273.303 | 2.66 | 0.15 | -2.65 |
| 9158.00 | 90.620 | 329.450 | 6829.10 | 1005.70 | 191.17 | -2004.95 | 1628657.92 | 2698554.41 | 39°14'00.504"N | 80°48'39.492"W | 2014.05 | 275.447 | 1.56 | -0.10 | -1.56 |
| 9247.00 | 90.620 | 328.970 | 6828.14 | 1094.16 | 267.62 | -2050.51 | 1628612.37 | 269931.86 | 39°14'01.253"N | 80°48'40.085"W | 2067.90 | 277.436 | 0.54 | 0.00 | -0.54 |
| 9337.00 | 90.680 | 329.060 | 6827.11 | 1183.58 | 344.77 | -2096.84 | 1628566.04 | 270009.01 | 39°14'02.009"N | 80°48'40.688"W | 2124.99 | 279.337 | 0.12 | 0.07 | 0.10 |
| 9426.00 | 90.580 | 332.400 | 6826.14 | 1272.26 | 422.39 | -2140.35 | 1628522.54 | 270086.63 | 39°14'02.770"N | 80°48'41.256"W | 2181.63 | 281.164 | 3.75 | -0.11 | 3.75 |
| 9516.00 | 90.680 | 335.710 | 6825.15 | 1362.21 | 503.30 | -2179.71 | 1628483.17 | 270167.54 | 39°14'03.564"N | 80°48'41.771"W | 2237.07 | 283.002 | 3.68 | 0.11 | 3.68 |
| 9605.00 | 90.550 | 333.900 | 6824.19 | 1451.19 | 583.83 | -2217.60 | 1628445.29 | 270248.06 | 39°14'04.354"N | 80°48'42.267"W | 2293.16 | 284.750 | 2.04 | -0.15 | -2.03 |
| 9695.00 | 90.580 | 332.740 | 6823.30 | 1541.12 | 664.24 | -2258.00 | 1628404.88 | 270328.47 | 39°14'05.143"N | 80°48'42.796"W | 2353.68 | 286.392 | 1.29 | 0.03 | -1.29 |
| 9784.00 | 90.650 | 333.380 | 6822.35 | 1630.04 | 743.58 | -2298.32 | 1628364.56 | 270407.80 | 39°14'05.921"N | 80°48'43.323"W | 2415.62 | 287.928 | 0.72 | 0.08 | 0.72 |
| 9874.00 | 90.770 | 335.860 | 6821.23 | 1720.01 | 824.88 | -2336.89 | 1628325.99 | 270489.10 | 39°14'06.719"N | 80°48'43.828"W | 2478.21 | 289.442 | 2.76 | 0.13 | 2.76 |
| 9963.00 | 90.710 | 337.870 | 6820.08 | 1808.98 | 906.71 | -2371.86 | 1628291.03 | 270570.93 | 39°14'07.523"N | 80°48'44.287"W | 2539.26 | 290.921 | 2.26 | -0.07 | 2.26 |
| 10053.00 | 90.680 | 334.010 | 6818.99 | 1898.95 | 988.87 | -2408.54 | 1628254.35 | 270653.08 | 39°14'08.330"N | 80°48'44.769"W | 2603.64 | 292.322 | 4.29 | -0.03 | -4.29 |
| 10143.00 | 91.080 | 335.790 | 6817.61 | 1988.93 | 1070.36 | -2446.71 | 1628216.18 | 270734.57 | 39°14'09.129"N | 80°48'45.269"W | 2670.59 | 293.628 | 2.03 | 0.44 | 1.98 |
| 10232.00 | 91.020 | 338.140 | 6815.98 | 2077.88 | 1152.24 | -2481.53 | 1628181.37 | 270816.45 | 39°14'09.934"N | 80°48'45.727"W | 2735.99 | 294.907 | 2.64 | -0.07 | 2.64 |
| 10322.00 | 91.110 | 339.310 | 6814.30 | 2167.72 | 1236.09 | -2514.18 | 1628148.72 | 270900.30 | 39°14'10.758"N | 80°48'46.157"W | 2801.61 | 296.181 | 1.30 | 0.10 | 1.30 |
| 10411.00 | 90.980 | 337.760 | 6812.68 | 2256.58 | 1318.90 | -2546.74 | 1628116.16 | 270983.10 | 39°14'11.571"N | 80°48'46.586"W | 2867.99 | 297.379 | 1.75 | -0.15 | -1.74 |
| 10501.00 | 91.080 | 336.340 | 6811.06 | 2346.53 | 1401.76 | -2581.83 | 1628081.07 | 271065.96 | 39°14'12.385"N | 80°48'47.047"W | 2937.82 | 298.499 | 1.58 | 0.11 | -1.58 |
| 10590.00 | 90.310 | 335.380 | 6809.98 | 2435.52 | 1482.97 | -2618.22 | 1628044.68 | 271147.17 | 39°14'13.182"N | 80°48'47.525"W | 3009.04 | 299.527 | 1.38 | -0.87 | -1.08 |
| 10679.00 | 89.690 | 334.800 | 6809.98 | 2524.51 | 1563.69 | -2655.71 | 1628007.19 | 271227.88 | 39°14'13.975"N | 80°48'48.016"W | 3081.87 | 300.490 | 0.95 | -0.70 | -0.65 |
| 10769.00 | 89.690 | 334.440 | 6810.47 | 2614.50 | 1645.01 | -2694.28 | 1627968.62 | 271309.19 | 39°14'14.773"N | 80°48'48.522"W | 3156.77 | 301.406 | 0.40 | 0.00 | -0.40 |
| 10858.00 | 89.690 | 333.940 | 6810.95 | 2703.48 | 1725.13 | -2733.03 | 1627929.87 | 271389.31 | 39°14'15.559"N | 80°48'49.029"W | 3231.95 | 302.261 | 0.56 | 0.00 | -0.56 |
| 10948.00 | 89.780 | 333.370 | 6811.37 | 2793.43 | 1805.78 | -2772.97 | 1627889.93 | 271469.96 | 39°14'16.350"N | 80°48'49.551"W | 3309.11 | 303.072 | 0.64 | 0.10 | -0.63 |
| 11038.00 | 90.340 | 334.520 | 6811.27 | 2883.40 | 1886.63 | -2812.50 | 1627850.41 | 271550.81 | 39°14'17.144"N | 80°48'50.069"W | 3386.67 | 303.854 | 1.42 | 0.62 | 1.28 |
| 11127.00 | 90.950 | 333.810 | 6810.27 | 2972.36 | 1966.73 | -2851.28 | 1627811.63 | 271630.90 | 39°14'17.930"N | 80°48'50.577"W | 3463.79 | 304.597 | 1.05 | 0.69 | -0.80 |
| 11217.00 | 90.920 | 332.280 | 6808.80 | 3062.27 | 2046.94 | -2892.07 | 1627770.84 | 271711.11 | 39°14'18.716"N | 80°48'51.110"W | 3543.17 | 305.290 | 1.70 | -0.03 | -1.70 |
| 11307.00 | 90.890 | 333.430 | 6807.38 | 3152.16 | 2127.01 | -2933.13 | 1627729.78 | 271791.18 | 39°14'19.502"N | 80°48'51.646"W | 3623.18 | 305.948 | 1.28 | -0.03 | 1.28 |
| 11396.00 | 90.430 | 333.540 | 6806.36 | 3241.10 | 2206.65 | -2972.86 | 1627690.05 | 271870.81 | 39°14'20.283"N | 80°48'52.166"W | 3702.32 | 306.585 | 0.53 | -0.52 | 0.12 |
| 11486.00 | 89.820 | 335.220 | 6806.16 | 3331.08 | 2287.79 | -3011.77 | 1627651.14 | 271951.96 | 39°14'21.079"N | 80°48'52.676"W | 3782.17 | 307.221 | 1.99 | -0.68 | 1.87 |
| 11575.00 | 89.910 | 338.620 | 6806.37 | 3420.04 | 2369.66 | -3046.66 | 1627616.26 | 272033.82 | 39°14'21.883"N | 80°48'53.134"W | 3859.71 | 307.875 | 3.82 | 0.10 | 3.82 |
| 11665.00 | 89.940 | 339.870 | 6806.49 | 3509.84 | 2453.82 | -3078.55 | 1627584.37 | 272117.97 | 39°14'22.710"N | 80°48'53.555"W | 3936.84 | 308.557 | 1.39 | 0.03 | 1.39 |



Actual Wellpath Report

OXF-97A-HS AWP Proj: 16766'
Page 7 of 10



REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|-------------------|----------|----------------|
| Operator | NOBLE ENERGY | Slot | Slot A |
| Area | Doddridge Co., WV | Well | OXF-97A-HS |
| Field | Doddridge | Wellbore | OXF-97A-HS AWB |
| Facility | OXF-97 Pad | | |

WELLPATH DATA (208 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert.Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 11754.00 | 89.320 | 337.620 | 6807.06 | 3598.69 | 2536.75 | -3110.81 | 1627552.11 | 272200.91 | 39°14'23.525"N | 80°48'53.981"W | 4014.01 | 309.196 | 2.62 | -0.70 | -2.53 |
| 11843.00 | 89.380 | 336.130 | 6808.07 | 3687.66 | 2618.60 | -3145.76 | 1627517.16 | 272282.75 | 39°14'24.329"N | 80°48'54.440"W | 4093.03 | 309.775 | 1.68 | 0.07 | -1.67 |
| 11933.00 | 89.380 | 336.810 | 6809.05 | 3777.64 | 2701.11 | -3181.69 | 1627481.23 | 272365.25 | 39°14'25.139"N | 80°48'54.912"W | 4173.62 | 310.330 | 0.76 | 0.00 | 0.76 |
| 12023.00 | 89.450 | 337.130 | 6809.97 | 3867.60 | 2783.93 | -3216.90 | 1627446.02 | 272448.07 | 39°14'25.953"N | 80°48'55.375"W | 4254.26 | 310.873 | 0.36 | 0.08 | 0.36 |
| 12112.00 | 89.750 | 339.480 | 6810.59 | 3956.49 | 2866.62 | -3249.79 | 1627413.13 | 272530.76 | 39°14'26.765"N | 80°48'55.808"W | 4333.43 | 311.415 | 2.66 | 0.34 | 2.64 |
| 12202.00 | 90.150 | 339.630 | 6810.67 | 4046.26 | 2950.95 | -3281.23 | 1627381.69 | 272615.09 | 39°14'27.594"N | 80°48'56.223"W | 4413.00 | 311.966 | 0.47 | 0.44 | 0.17 |
| 12291.00 | 90.030 | 339.250 | 6810.53 | 4135.05 | 3034.28 | -3312.49 | 1627350.44 | 272698.41 | 39°14'28.413"N | 80°48'56.636"W | 4492.15 | 312.490 | 0.45 | -0.13 | -0.43 |
| 12381.00 | 89.850 | 335.310 | 6810.62 | 4224.99 | 3117.28 | -3347.24 | 1627315.69 | 272781.41 | 39°14'29.228"N | 80°48'57.093"W | 4574.00 | 312.963 | 4.38 | -0.20 | -4.38 |
| 12470.00 | 89.940 | 332.570 | 6810.78 | 4313.95 | 3197.22 | -3386.34 | 1627276.59 | 272861.35 | 39°14'30.013"N | 80°48'57.605"W | 4657.20 | 313.355 | 3.08 | 0.10 | -3.08 |
| 12560.00 | 89.940 | 334.490 | 6810.88 | 4403.89 | 3277.78 | -3426.45 | 1627236.48 | 272941.91 | 39°14'30.803"N | 80°48'58.130"W | 4741.77 | 313.730 | 2.13 | 0.00 | 2.13 |
| 12649.00 | 89.690 | 338.660 | 6811.16 | 4492.85 | 3359.43 | -3461.82 | 1627201.11 | 273023.55 | 39°14'31.605"N | 80°48'58.595"W | 4823.90 | 314.140 | 4.69 | -0.28 | 4.69 |
| 12739.00 | 89.820 | 343.100 | 6811.55 | 4582.43 | 3444.44 | -3491.30 | 1627171.64 | 273108.56 | 39°14'32.441"N | 80°48'58.985"W | 4904.42 | 314.613 | 4.94 | 0.14 | 4.93 |
| 12828.00 | 89.660 | 344.650 | 6811.95 | 4670.48 | 3529.94 | -3516.01 | 1627146.92 | 273194.05 | 39°14'33.282"N | 80°48'59.315"W | 4982.25 | 315.113 | 1.75 | -0.18 | -1.74 |
| 12918.00 | 89.750 | 343.680 | 6812.42 | 4759.44 | 3616.52 | -3540.57 | 1627122.36 | 273280.63 | 39°14'34.134"N | 80°48'59.643"W | 5061.11 | 315.608 | 1.08 | 0.10 | -1.08 |
| 13007.00 | 89.780 | 339.430 | 6812.78 | 4847.93 | 3700.93 | -3568.72 | 1627094.21 | 273365.04 | 39°14'34.964"N | 80°49'00.017"W | 5141.27 | 316.042 | 4.78 | 0.03 | -4.78 |
| 13097.00 | 89.720 | 336.200 | 6813.17 | 4937.84 | 3784.25 | -3602.70 | 1627060.24 | 273448.36 | 39°14'35.783"N | 80°49'00.464"W | 5224.94 | 316.408 | 3.59 | -0.07 | -3.59 |
| 13187.00 | 89.850 | 332.980 | 6813.51 | 5027.82 | 3865.54 | -3641.31 | 1627021.62 | 273529.64 | 39°14'36.581"N | 80°49'00.970"W | 5310.51 | 316.711 | 3.58 | 0.14 | -3.58 |
| 13276.00 | 89.910 | 331.540 | 6813.70 | 5116.67 | 3944.31 | -3682.74 | 1626980.20 | 273608.41 | 39°14'37.353"N | 80°49'01.511"W | 5396.31 | 316.964 | 1.62 | 0.07 | -1.62 |
| 13366.00 | 89.850 | 325.770 | 6813.89 | 5205.99 | 4021.14 | -3729.54 | 1626933.40 | 273685.23 | 39°14'38.106"N | 80°49'02.120"W | 5484.43 | 317.155 | 6.41 | -0.07 | -6.41 |
| 13455.00 | 89.780 | 326.000 | 6814.18 | 5293.75 | 4094.82 | -3779.45 | 1626883.49 | 273758.92 | 39°14'38.827"N | 80°49'02.768"W | 5572.42 | 317.293 | 0.27 | -0.08 | 0.26 |
| 13545.00 | 90.180 | 327.350 | 6814.21 | 5382.68 | 4170.02 | -3828.90 | 1626834.05 | 273834.11 | 39°14'39.563"N | 80°49'03.411"W | 5661.23 | 317.442 | 1.56 | 0.44 | 1.50 |
| 13635.00 | 90.150 | 328.550 | 6813.95 | 5471.90 | 4246.30 | -3876.65 | 1626786.29 | 273910.39 | 39°14'40.310"N | 80°49'04.032"W | 5749.74 | 317.606 | 1.33 | -0.03 | 1.33 |
| 13724.00 | 90.120 | 331.700 | 6813.74 | 5560.50 | 4323.46 | -3920.98 | 1626741.97 | 273987.55 | 39°14'41.066"N | 80°49'04.610"W | 5836.65 | 317.795 | 3.54 | -0.03 | 3.54 |
| 13814.00 | 89.600 | 333.250 | 6813.96 | 5650.37 | 4403.27 | -3962.57 | 1626700.38 | 274067.36 | 39°14'41.848"N | 80°49'05.153"W | 5923.75 | 318.015 | 1.82 | -0.58 | 1.72 |
| 13903.00 | 89.080 | 332.050 | 6814.98 | 5739.25 | 4482.32 | -4003.46 | 1626659.50 | 274146.40 | 39°14'42.624"N | 80°49'05.687"W | 6009.90 | 318.230 | 1.47 | -0.58 | -1.35 |
| 13993.00 | 88.650 | 333.290 | 6816.77 | 5829.13 | 4562.25 | -4044.77 | 1626618.19 | 274226.33 | 39°14'43.408"N | 80°49'06.227"W | 6097.07 | 318.441 | 1.46 | -0.48 | 1.38 |
| 14083.00 | 88.550 | 336.780 | 6818.97 | 5919.08 | 4643.81 | -4082.74 | 1626580.22 | 274307.88 | 39°14'44.208"N | 80°49'06.725"W | 6183.34 | 318.679 | 3.88 | -0.11 | 3.88 |
| 14172.00 | 88.550 | 337.890 | 6821.22 | 6008.01 | 4725.91 | -4117.02 | 1626545.94 | 274389.98 | 39°14'45.015"N | 80°49'07.176"W | 6267.70 | 318.939 | 1.25 | 0.00 | 1.25 |
| 14262.00 | 88.710 | 338.010 | 6823.37 | 6097.90 | 4809.30 | -4150.80 | 1626512.16 | 274473.37 | 39°14'45.834"N | 80°49'07.621"W | 6352.83 | 319.203 | 0.22 | 0.18 | 0.13 |
| 14351.00 | 88.610 | 340.510 | 6825.45 | 6186.67 | 4892.50 | -4182.30 | 1626480.65 | 274556.57 | 39°14'46.652"N | 80°49'08.037"W | 6436.48 | 319.475 | 2.81 | -0.11 | 2.81 |



Actual Wellpath Report

OXF-97A-HS AWP Proj: 16766'
Page 8 of 10



REFERENCE WELLPATH IDENTIFICATION

| Operator | NOBLE ENERGY | Slot | Slot A |
|----------|-------------------|----------|----------------|
| Area | Doddridge Co., WV | Well | OXF-97A-HS |
| Field | Doddridge | Wellbore | OXF-97A-HS AWB |
| Facility | OXF-97 Pad | | |

WELLPATH DATA (208 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert. Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|----------|-----------------|-------------|----------|-----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 14441.00 | 88.950 | 339.780 | 6827.37 | 6276.35 | 4977.13 | -4212.86 | 1626450.10 | 274641.20 | 39°14'47.483"N | 80°49'08.441"W | 6520.74 | 319.754 | 0.89 | 0.38 | -0.81 |
| 14530.00 | 88.950 | 341.190 | 6829.00 | 6365.00 | 5061.01 | -4242.59 | 1626420.37 | 274725.06 | 39°14'48.308"N | 80°49'08.835"W | 6604.04 | 320.027 | 1.58 | 0.00 | 1.58 |
| 14619.00 | 88.890 | 341.950 | 6830.68 | 6453.48 | 5145.43 | -4270.72 | 1626392.24 | 274809.48 | 39°14'49.138"N | 80°49'09.208"W | 6686.89 | 320.307 | 0.86 | -0.07 | 0.85 |
| 14709.00 | 88.800 | 336.270 | 6832.49 | 6543.25 | 5229.46 | -4302.79 | 1626360.17 | 274893.51 | 39°14'49.964"N | 80°49'09.631"W | 6772.09 | 320.552 | 6.31 | -0.10 | -6.31 |
| 14799.00 | 88.830 | 334.550 | 6834.35 | 6633.23 | 5311.27 | -4340.23 | 1626322.73 | 274975.32 | 39°14'50.767"N | 80°49'10.122"W | 6859.10 | 320.745 | 1.91 | 0.03 | -1.91 |
| 14888.00 | 88.950 | 334.480 | 6836.08 | 6722.20 | 5391.60 | -4378.52 | 1626284.44 | 275055.65 | 39°14'51.555"N | 80°49'10.624"W | 6945.56 | 320.920 | 0.16 | 0.13 | -0.08 |
| 14978.00 | 88.860 | 336.640 | 6837.80 | 6812.17 | 5473.52 | -4415.75 | 1626247.22 | 275137.56 | 39°14'52.360"N | 80°49'11.112"W | 7032.65 | 321.105 | 2.40 | -0.10 | 2.40 |
| 15067.00 | 89.010 | 336.340 | 6839.45 | 6901.14 | 5555.11 | -4451.25 | 1626211.72 | 275219.15 | 39°14'53.161"N | 80°49'11.579"W | 7118.49 | 321.295 | 0.38 | 0.17 | -0.34 |
| 15156.00 | 89.050 | 336.200 | 6840.96 | 6990.12 | 5636.58 | -4487.06 | 1626175.91 | 275300.61 | 39°14'53.961"N | 80°49'12.049"W | 7204.49 | 321.478 | 0.16 | 0.04 | -0.16 |
| 15246.00 | 88.830 | 335.260 | 6842.62 | 7080.11 | 5718.61 | -4524.04 | 1626138.93 | 275382.64 | 39°14'54.766"N | 80°49'12.534"W | 7291.74 | 321.652 | 1.07 | -0.24 | -1.04 |
| 15336.00 | 88.950 | 331.210 | 6844.37 | 7170.00 | 5798.93 | -4564.56 | 1626098.42 | 275462.96 | 39°14'55.554"N | 80°49'13.064"W | 7379.89 | 321.792 | 4.50 | 0.13 | -4.50 |
| 15425.00 | 88.830 | 328.140 | 6846.09 | 7258.52 | 5875.73 | -4609.48 | 1626053.49 | 275539.76 | 39°14'56.306"N | 80°49'13.650"W | 7468.03 | 321.886 | 3.45 | -0.13 | -3.45 |
| 15515.00 | 88.920 | 331.800 | 6847.86 | 7348.07 | 5953.62 | -4654.50 | 1626008.47 | 275617.65 | 39°14'57.070"N | 80°49'14.236"W | 7557.12 | 321.982 | 4.07 | 0.10 | 4.07 |
| 15604.00 | 88.950 | 334.700 | 6849.51 | 7436.97 | 6033.08 | -4694.55 | 1625968.43 | 275697.10 | 39°14'57.849"N | 80°49'14.760"W | 7644.40 | 322.112 | 3.26 | 0.03 | 3.26 |
| 15694.00 | 88.950 | 334.430 | 6851.16 | 7526.95 | 6114.34 | -4733.20 | 1625929.78 | 275778.36 | 39°14'58.647"N | 80°49'15.267"W | 7732.29 | 322.256 | 0.30 | 0.00 | -0.30 |
| 15783.00 | 88.860 | 335.580 | 6852.86 | 7615.93 | 6194.99 | -4770.80 | 1625892.18 | 275859.00 | 39°14'59.438"N | 80°49'15.760"W | 7819.10 | 322.400 | 1.30 | -0.10 | 1.29 |
| 15873.00 | 88.890 | 333.640 | 6854.63 | 7705.89 | 6276.27 | -4809.38 | 1625853.60 | 275940.29 | 39°15'00.236"N | 80°49'16.265"W | 7907.07 | 322.538 | 2.16 | 0.03 | -2.16 |
| 15962.00 | 88.830 | 334.870 | 6856.40 | 7794.85 | 6356.42 | -4848.03 | 1625814.95 | 276020.43 | 39°15'01.022"N | 80°49'16.771"W | 7994.22 | 322.667 | 1.38 | -0.07 | 1.38 |
| 16052.00 | 88.550 | 334.080 | 6858.46 | 7884.81 | 6437.62 | -4886.80 | 1625776.19 | 276101.62 | 39°15'01.819"N | 80°49'17.279"W | 8082.31 | 322.798 | 0.93 | -0.31 | -0.88 |
| 16141.00 | 88.580 | 333.490 | 6860.69 | 7973.75 | 6517.44 | -4926.10 | 1625736.88 | 276181.44 | 39°15'02.602"N | 80°49'17.794"W | 8169.67 | 322.917 | 0.66 | 0.03 | -0.66 |
| 16231.00 | 88.210 | 334.010 | 6863.21 | 8063.67 | 6598.12 | -4965.89 | 1625697.10 | 276262.12 | 39°15'03.394"N | 80°49'18.315"W | 8258.05 | 323.034 | 0.71 | -0.41 | 0.58 |
| 16320.00 | 88.370 | 333.870 | 6865.86 | 8152.60 | 6678.04 | -5004.97 | 1625658.02 | 276342.04 | 39°15'04.178"N | 80°49'18.826"W | 8345.42 | 323.150 | 0.24 | 0.18 | -0.16 |
| 16409.00 | 88.520 | 334.430 | 6868.28 | 8241.54 | 6758.10 | -5043.77 | 1625619.23 | 276422.10 | 39°15'04.964"N | 80°49'19.334"W | 8432.77 | 323.265 | 0.65 | 0.17 | 0.63 |
| 16499.00 | 88.490 | 335.630 | 6870.63 | 8331.50 | 6839.66 | -5083.74 | 1625581.25 | 276503.65 | 39°15'05.764"N | 80°49'19.832"W | 8520.86 | 323.388 | 1.33 | -0.03 | 1.33 |
| 16588.00 | 88.580 | 336.340 | 6872.90 | 8420.47 | 6920.93 | -5117.95 | 1625545.04 | 276584.92 | 39°15'06.562"N | 80°49'20.308"W | 8607.71 | 323.517 | 0.80 | 0.10 | 0.80 |
| 16678.00 | 88.550 | 337.910 | 6875.16 | 8510.40 | 7003.82 | -5152.93 | 1625510.07 | 276667.81 | 39°15'07.376"N | 80°49'20.768"W | 8695.18 | 323.657 | 1.74 | -0.03 | 1.74 |
| 16742.00 | 88.460 | 339.320 | 6876.83 | 8574.29 | 7063.40 | -5176.25 | 1625486.74 | 276727.38 | 39°15'07.961"N | 80°49'21.076"W | 8757.01 | 323.765 | 2.21 | -0.14 | 2.20 |
| 16766.00 | 88.460 | 339.320 | 6877.47 | 8598.22 | 7085.84 | -5184.73 | 1625478.27 | 276749.82 | 39°15'08.182"N | 80°49'21.187"W | 8780.12 | 323.807 | 0.00 | 0.00 | 0.00 |



Actual Wellpath Report

OXF-97A-HS AWP Proj: 16766'

Page 9 of 10



REFERENCE WELLPATH IDENTIFICATION

| Operator | NOBLE ENERGY | Slot | Slot A |
|----------|-------------------|----------|----------------|
| Area | Doddridge Co., WV | Well | OXF-97A-HS |
| Field | Doddridge | Wellbore | OXF-97A-HS AWB |
| Facility | OXF-97 Pad | | |

TARGETS

| Name | MD [ft] | TVD [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Shape |
|----------------------|---------|----------|------------|-----------|-------------------|--------------------|----------------|----------------|---------|
| OXF-97A-HS LP Rev-1 | | 6826.70 | -909.73 | -1527.86 | 1629135.00 | 268754.55 | 39°13'49.693"N | 80°48'33.226"W | point |
| OXF-97A-HS LP Rev-2 | | 6830.00 | -1046.22 | -1465.63 | 1629197.23 | 268618.07 | 39°13'48.353"N | 80°48'32.410"W | point |
| OXF-97A-HS BHL Rev-2 | | 6865.00 | 7097.29 | -5178.56 | 1625484.44 | 276761.27 | 39°15'08.296"N | 80°49'21.111"W | point |
| OXF-97 LL | | 7198.45 | 0.03 | -0.03 | 1630662.77 | 269664.28 | 39°13'58.904"N | 80°48'13.980"W | polygon |

WELLPATH COMPOSITION - Ref Wellbore: OXF-97A-HS AWB Ref Wellpath: OXF-97A-HS AWP Proj: 16766'

| Start MD [ft] | End MD [ft] | Positional Uncertainty Model | Log Name/Comment | Wellbore |
|---------------|-------------|--|--|----------------|
| 18.00 | 2918.00 | Generic gyro - northseeking (Standard) | 01_Gyrodata MS Gyro <12-1/4"> (100'-2900') | OXF-97A-HS AWB |
| 2918.00 | 5983.00 | ISWISA MWD, Rev. 2 (Standard) | 02_Scientific EM <8-3/4"> (2910')(2967'-5975') | OXF-97A-HS AWB |
| 5983.00 | 16742.00 | NaviTrak (AT Curve Short Spaced) | 03_BHI AT Curve <8-1/2"> (5983')(6025'-16742') | OXF-97A-HS AWB |
| 16742.00 | 16766.00 | Blind Drilling (std) | Projection to bit | OXF-97A-HS AWB |



Actual Wellpath Report

OXF-97A-HS AWP Proj: 16766'
Page 10 of 10



REFERENCE WELLPATH IDENTIFICATION

| Operator | NOBLE ENERGY | Slot | Slot A |
|----------|-------------------|----------|----------------|
| Area | Doddridge Co., WV | Well | OXF-97A-HS |
| Field | Doddridge | Wellbore | OXF-97A-HS AWB |
| Facility | OXF-97 Pad | | |

COMMENTS

Wellpath general comments
 API: 47-017-06481-0000
 BHI Job #: 7176330
 Rig: Precision 543
 Duration: 4/15/2015-4/20/2015
 Gyrodatta MS Gyro <12-1/4"> (100'-2900')
 Scientific EM <8-3/4"> (2910')(2967'-5975')
 BHI AT Curve <8-1/2"> (5983')(6025'-16742')
 Projected MD at TD: 16766'